

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : A61B 18/18, 17/22		A1	(11) International Publication Number: WO 00/49957 (43) International Publication Date: 31 August 2000 (31.08.00)
(21) International Application Number: PCT/GB00/00682		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 25 February 2000 (25.02.00)			
(30) Priority Data: 9904373.9 25 February 1999 (25.02.99) GB			
(71) Applicant (for all designated States except US): MICROSULIS PLC [GB/GB]; 10 St. Ann Street, Salisbury, Wiltshire SP1 2DN (GB).		Published <i>With international search report.</i>	
(72) Inventor; and			
(75) Inventor/Applicant (for US only): NIGEL, Cronin [GB/GB]; 14 Englishcombe Lane, Bath BA2 2ED (GB).			
(74) Agent: HOGG, Jeffery, Keith; Withers & Rogers, Goldings House, 2 Hays Lane, London SE1 2HW (GB).			

(54) Title: RADIATION APPLICATOR**(57) Abstract**

Radiation applicators comprise an elongate device having an antenna (240, 340) at their tip for coupling radiation into biological tissue and a dielectric body (250, 350) surrounding the antenna so as to encompass substantially the whole of the near-field region of the antenna and/or to enhance transmission of radiation in the forward direction. The body (250, 350) may be cylindrical with the antenna (240, 340) along its axis. The antenna may be $\lambda/2$ in length and $\lambda/2$ in radius. The tip (270) of the antenna (240) may be rounded hemispherical with radius $\lambda/2$ to enhance forward transmission of radiation. The dielectric constant (ϵ) of the body (250, 350) is as high as possible to reduce its diameter at a desired operating frequency but may be matched to the surrounding tissue by another layer of dielectric material (380) with a value (ϵ) intermediate that of the core (360) of the body (350) and the tissue.

